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PATIENT SATISFACTION WITH THE ROLE
OF THE NURSE PRACTITIONER

being

A Project Presented to the Graduate Faculty
of Mississippi University for Women
in Partial Fulfillment of the Requirements
for the Degree of Master of Science in Nursing

by

Michelle Rosamond Rice

BSN, Mississippi University for Women

Date _____ Approved Buckley J. Moore
Graduate Studies Director

Approved Mary Patricia Curtis
Graduate Program Director

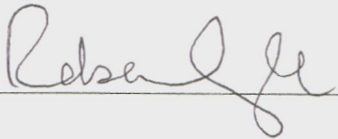
Graduate Committee Approval

Graduate Committee Approval

The Graduate Committee of Michelle R. Rice
hereby approves her project as meeting partial
fulfillment of the requirements for the Degree
of Master of Science in Nursing

Date 7/31/06

Approved 

Approved 

Approved _____

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DEDICATION

I dedicate this book to my family for believing in me. You were always there when I was discouraged. You gave me the reason for pushing on, knowing that it would all be worth it one day.

To Steve, my best friend, my husband and my greatest supporter. You are always there for me. I can never thank you enough. You always believe in me and push me to do more than I could alone. I could not make it without you. You are truly the wind beneath my wings. I love you.

To Presley, my sweet sunshine girl. You always give me something to smile about and boost my mood. You are like sunshine on a cloudy day. Thank you for the laughs and smiles to help this year go by as painlessly as possible. I thank God for you every day.

To Parker, you are my biggest fan. You always find a reason to say, "Good job, Mama!" Even if all I have done is fix you a drink or throw the ball to you. You help keep me young. I always wanted a little boy just like you. How lucky I am to have been blessed with you.

Without each of you, it would not be worth it. I love you more than you'll ever know.

PATIENT SATISFACTION WITH THE ROLE OF THE NURSE PRACTITIONER

Michelle Rosamond Rice, BSN, APRN

Mississippi University for Women, 2006

Supervising Professor: Robert Swanson, MSN

Abstract

The role of the nurse practitioner has been present for almost 50 years. This role has evolved and is prevalently seen today. The purpose of this study is to consider patient satisfaction of this role. Many factors can affect patient satisfaction and these also will be investigated. The nurse practitioner role is a major factor in healthcare. Patient satisfaction with the role is an important fact to consider and will impact the future of the role. A systematic review of literature using a computer search of CINAHL, MEDLINE, and Cochrane Library identified a lack of information concerning patient satisfaction with the role of the nurse practitioner. A computer search on Medline found 2,830 "hits" on nurse practitioner, and 30,364 for patient satisfaction. A search for both terms nurse practitioner and patient satisfaction revealed 101 hits. Only 9 hits were within the last year. Findings on CINAHL were similar with 2,438 hits on the term nurse practitioner, while receiving 9,420 hits from patient satisfaction. 102 hits were received after searching the terms together. This number dropped to 56 when narrowed to 2000-2006. The number plummeted to 6 when a search for both terms was refined to the past year. The Cochrane Library had very few results. The term nurse practitioner received 356 hits, while patient satisfaction received 908. Nurse practitioner and patient satisfaction over the last five years dropped to 50 and then to 8 when only the last year was searched. Patient satisfaction with care from the nurse practitioner and the role of the nurse practitioner is a very important topic that needs further investigation. Studies need to be done to prove that patients are satisfied with the nurse practitioner role. Positive information backing patient satisfaction can greatly influence the future of the nurse practitioner, while negative findings could have a negative affect. Regardless of the results, this research is needed and will impact the future of healthcare. The theoretical foundation for the purpose of this study is Imogene King's Interacting Systems Framework and Theory of Goal Attainment. The role of the nurse practitioner is a familiar one in today's healthcare. Information is needed to either back or change this role. This study will determine patient satisfaction with the nurse practitioner role by using current literature concerning this topic.

ACKNOWLEDGEMENTS

I would like to take this opportunity to recognize the individual instrumental in the completion of this research project. Special gratitude is expressed to Robert Swanson who has been my clinical advisor this year. You help me keep things in perspective in order to get them done.

Above all, I would like to thank God for giving me this opportunity to complete my master's studies. I will use it to make a difference in this world.

“Ask and it will be given to you; seek and you will find; knock and the door will be opened to you.” Matthew 7:7 NIV

TABLE OF CONTENTS

COPYRIGHT PAGE.....	iii
DEDICATION PAGE.....	iv
ABSTRACT.....	v
ACKNOWLEDGEMENTS.....	vi
TABLE OF CONTENTS.....	vii
LIST OF TABLES.....	ix
CHAPTER I	
Dimensions of the Problem.....	1
Statement of Purpose.....	3
Significance of the Study.....	3
Theoretical Foundation.....	4
Definitions of Terms	
Nurse Practitioner	
Theoretical.....	7
Operational.....	7
Patient Satisfaction	
Theoretical.....	7
Operational.....	8
Research Questions.....	8
Delimitations.....	8
Limitations.....	8
Summary.....	8
CHAPTER II	
Review of the Literature	
An Overview of the Healthcare Literature Related to Patient Satisfaction and the Role of the Nurse Practitioner.....	10
Summary.....	20
CHAPTER III	
Design and Methodology	
Approach.....	22
Literature Selection Procedure.....	22
Literature Analysis.....	23
Summary.....	23
CHAPTER IV	
Knowledgebase Findings and Practice-Based Application	
Knowledgebase Findings.....	24
Practice-Based Application.....	27
Summary.....	27
CHAPTER V	
Evidence-Based Conclusions, Implications, and Recommendations	
Summary of the Investigation.....	28
Interpretation of Findings with Conclusion.....	28
Limitations.....	30
Implications and Recommendations.....	30

Summary.....	31
REFERENCES.....	32
APPENDIX.....	36

LIST OF TABLES

Table 1-Summary of Literature Searches.....	3
Table 2-Total Satisfaction Score Mean By Site.....	10
Table 3-Aggregate Mean Scale Score On Modified DWPSQ By Clinic.....	16

CHAPTER I

Dimensions of the Problem

The role of the nurse practitioner evolved related to an increased need for patient care with decreased access to that care. The role of the nurse practitioner is vague. Many patients do not fully understand the role. This lack of knowledge can affect patient satisfaction of the nurse practitioner role. A lack of knowledge can also affect patient satisfaction with care provided by the nurse practitioner. This lack of public knowledge of the role of the nurse practitioner can negatively affect patients as well as nurse practitioners. A study done by Beal, Steven, and Quinn (1997) found that a lack of understanding of the nurse practitioner role was one of the most dissatisfying aspects of the role of the nurse practitioner (p.72). Patient satisfaction needs to be clearly defined and measured in relation to the nurse practitioner. Patient satisfaction can greatly influence the future of the nurse practitioner. Patient satisfaction can lead to increased acceptance of the nurse practitioner as not only a mid-level provider, but also a primary provider.

“Patient satisfaction has become a popular outcome measure of quality health service” (Green and Davis, 2005, p. 139). Studies investigating patient satisfaction with nurse practitioners are surfacing as nurse practitioners become more common. These studies will help to differentiate nurse practitioner practices from those of other healthcare providers (Green and Davis, 2005). Several patient satisfaction questionnaires are available. These include the Di’Tomasso-Willard Patient Satisfaction Questionnaire (DWPSQ) (Larrabee, Ferri, and Hartig, 1997), the Consumer Assessment of Health Plans Survey (CAHPS) (Hooker, Cipher, and Sekscenski, 2005), the Nurse Practitioner Satisfaction Instrument (NPSI) (Knudtson, 2000), the SF-20 Health Survey (SF-20) (Pinkerton and Bush, 2000) as well as others. The use of patient

satisfaction questionnaires as well as the information received from their use can be detrimental to the role of the nurse practitioner. Further studies regarding patient satisfaction with the nurse practitioner role are needed.

Not only is it important to research patient satisfaction with care by the nurse practitioner, it is also important to look at factors that positively and negatively affect the level of satisfaction. This would be important and could be used by nurse practitioners to positively impact their practice. Patient satisfaction with care provided by the nurse practitioner needs further documentation in order to propel the nurse practitioner role in the future.

Problem Statement

Patient satisfaction with care by the nurse practitioner needs to be further studied and the results of these studies need to be disseminated to the public. These findings could have a positive or negative impact on the nurse practitioner depending on the findings. These findings will help differentiate the nurse practitioner role from other healthcare providers. This review intends to provide a summary of the literature regarding the current level of knowledge on patient satisfaction with care by the nurse practitioner. A study done by Cooper, Lindsey, Kinn and Swann (2002) found that patients in one emergency room were more satisfied with treatment by nurse practitioners versus other healthcare providers. The patients in this study said that the nurse practitioners were easier to talk to, gave them more information concerning their problem, and more advice on safety and avoidance of illness in the future (Cooper, et al, 2002). Research studies such as this will positively promote the nurse practitioner role by showing patient satisfaction. Larger studies are needed in order for the public to take note of the findings. Once the study findings are brought to public attention, the nurse practitioner role will inevitably be affected. The hope of nurse practitioners is that the information created by studies will bring positive changes to the role.

Statement of Purpose

A thorough understanding of the available literature regarding patient satisfaction with care provided by the nurse practitioner is important in the future of the nurse practitioner. In addition, a compilation of the current literature on factors that affect patient satisfaction with the nurse practitioner role is an important part of this review. For this reason, the purpose of this review is to further explore the literature regarding patient satisfaction of the nurse practitioner's care.

Significance of the Study

The current level of information regarding patient satisfaction is limited. A computer search was done using CINAHL, MEDLINE, and Cochrane Library on the topics involved in this study. A vast amount of information was found by using the keywords patient satisfaction. There was also a large amount of information with the keywords nurse practitioner. The amount of information dramatically dropped when linking these together i.e.: nurse practitioner AND patient satisfaction. The amount of information decreased again when limiting the information to the last five years. From these searches, all relevant and current articles were evaluated for use in the review. The following table is a summary of the searches conducted:

Table 1
Summary of Literature Searches

Keyword	Any Limiters	Number responses	Database
Nurse practitioner	None	2830	Medline
Patient satisfaction	None	30,364	Medline
Patient satisfaction AND Nurse practitioner	None	101	Medline
Nurse practitioner	2000-2005	906	Medline
Patient satisfaction	2000-2005	16,119	MEDLINE
Nurse practitioner AND Patient satisfaction	2000-2005	55	MEDLINE

Nurse Practitioner	None	2,438	CINAHL
Patient satisfaction	None	9,420	CINAHL
Patient satisfaction AND Nurse practitioner	None	102	CINHAL
Patient satisfaction AND Nurse practitioner	2000-2005	56	CINAHL
Patient satisfaction	None	908	Cochrane
Nurse practitioner AND Patient satisfaction	None	63	Cochrane
Nurse practitioner AND Patient satisfaction	2000-2005	50	Cochrane

Note. CINAHL=Cumulative Index to Nursing and Allied Health Literature, MEDLINE=Medical Literature Online, COCHRANE=Cochrane Library

As Knudtson (2000) states, “Few research studies exist that document the quality of nurse practitioner service measured by patient satisfaction” (p. 405). Knudtson (2000) also says that the higher the patient satisfaction, the more likely that the patient will follow plan of care and recommend the provider to others. These are two of the many important reasons that patient satisfaction needs to be studied in regard to the nurse practitioner. Another implication of the findings of a study on patient satisfaction with the nurse practitioner is that nurse practitioners can share the results that document the quality of nurse practitioner service with legislators. This could positively affect future reimbursement for nurse practitioner service. The findings can help to strengthen the nurse practitioner role. This could greatly influence the future of the nurse practitioner especially if the studies prove that patients are highly satisfied.

Theoretical Foundation

Imogene King's Interacting Systems Framework and Theory of Goal Attainment will be the theoretical foundation used in this review. The Interacting Systems Framework helps assist nurses in defining the interaction between personal, interpersonal, and social systems. King's theory was first developed in 1971. The concepts of the theory are interaction, perception, communication, transaction, self, role, stress, growth and development, time and personal space (King, 1999). These concepts are interrelated in every nursing situation. The framework shows the important connection between the individual, the community, and society. It is very important for nurse practitioners to practice and think in this way. The interaction between patients and nurse practitioners leads to a level of satisfaction. If satisfaction is high, this can improve the status and future of nurse practitioners. If satisfaction is low, it would educate practitioners on ways to improve patient satisfaction. Each of the individuals brings about ideas, attitudes, and perceptions to the exchange. This leads us to the fact that many factors can effect patient satisfaction with the nurse practitioner. For this reason, patient satisfaction with care by the nurse practitioner needs to be studied.

In King's theory, she made several assumptions specific to nurse-client interaction. These include, "Perceptions of nurse and client influence the interaction process. Goals, needs, and values of nurse and client influence the interaction process. Individuals have a right to knowledge about themselves. Individuals have the right to participate in decisions that influence their life, their health, and community services. Health professionals have a responsibility to share information that helps individuals make informed decisions about their health care. Individuals have the right to reject healthcare. Goals of health professionals may be incongruent." (George, 2002, p. 252). These are all important points to remember in the interaction between the nurse practitioner and the patient.

King defines the human being as “social, sentient, rational, reacting, perceiving, controlling, purposeful, action-oriented, and time oriented” (George, 2002, p.252). Humans have three basic needs which include the need for health information, the need for care that prevents illness, and the need for care when humans are unable to care for themselves (George, 2002). King’s theory does not specifically define the term environment, but she implies and makes reference to the environment. King believes that open systems imply that interactions occur between the system and the system’s environment, which proves that the environment is ever changing (Toomey and Alligood, 2002). In reference to environment, King (1990) stated, “environment is a function of balance between internal and external interactions (p. 127). In King’s metaparadigm she defines nursing as the relationship between the nurse and client using action, reaction, and interaction in a health care situation (Toomey and Alligood, 2002). This interaction provides a time for each to share information about each one’s perception of the other and the situation. This interaction also provides a time of communication between them so that goals can be set and a plan to reach these goals is developed (George, 2002). Finally, health is described by King as, “a dynamic state in the life cycle; illness is an interference in the life cycle” (Toomey and Alligood, 2002, p.342). Health is the adjustment of stress in the environment through the use of one’s resources to achieve the person’s maximum potential (Tomey and Alligood, 2002).

Imogene King’s Interacting Systems Framework and Theory of Goal Attainment is very useful when studying patient satisfaction with the nurse practitioner. It is useful because the action, interaction and reaction between the patient and nurse practitioner determine patient satisfaction. This level of satisfaction is important and will affect the nurse practitioner role in the future. It is important for the Interacting System and Theory of Goal Attainment be used as a basis for the research on patient satisfaction with the nurse practitioner so that the process of

reaching patient satisfaction can be understood. It is also important to look at the different factors that affect patient satisfaction.

Definition of Terms

For the purpose of this project the following terms are identified:

Nurse practitioner.

Theoretical. “RNs who have a graduate level nursing preparation at the master’s or doctoral level as a nurse practitioner. These advanced practice registered nurses develop differential diagnoses, order, conduct, supervise and interpret diagnostic and laboratory tests, and prescribe pharmacologic and non-pharmacologic treatments in the direct management of acute and chronic illness and disease. Nurse practitioners provide health and medical care in private, acute and long-term settings. Nurse practitioners may specialize in areas such as family, geriatric, pediatric, primary or acute care. Nurse practitioners autonomously and in collaboration with other healthcare professionals treat and manage patients’ health problems and serve in various settings as researchers, consultants, and patient advocates for individuals, families, groups and communities” (Miller, Snyder, and Lindeke, 2005, p.163).

Operational. Nurse practitioner is defined operationally as, “A nurse practitioner is an experienced registered nurse with advanced training and education in preventing, diagnosing and treating illness. Nurse practitioners prescribe medication, treat illness, and administer physical examinations, providing individualized, holistic care. Nurse practitioners also focus on prevention, wellness and education” (Wikipedia, 2006, p.1).

Patient satisfaction.

Theoretical. “The degree of congruency between a patient’s expectations of ideal nursing and his perceptions of the real nursing care he receives” (Knudtson, 2000, p. 406).

Operational. An outcome of service that represents the patient's judgement of the quality of service received (Donabedian, 1988). Patient satisfaction is defined operationally as the amount of satisfaction a patient has with the care received from the nurse practitioner.

Research Questions

For the purpose of this study, the following research questions were generated:

1. How satisfied are patients with the care they receive from the nurse practitioner?
2. What factors affect patient satisfaction with the nurse practitioner?

Delimitations

Literature was delimited, for the purpose of this integrative literature review, to the following:

1. Literature which pertains to the role of the nurse practitioner. Literature which pertains to patient satisfaction.
2. Literature available through MEDLINE, CINAHL, and The Cochrane Library.
3. Literature available through Mississippi University for Women and the Interlibrary Loan Program.
4. Literature that is available in the English language or translated into English abstracts.

Limitations

For the purpose of this investigation a particular limitation identified is that the information obtained cannot be generalized beyond the scope of the research reviewed.

Summary

This chapter provided the foundation for the literature review regarding patient satisfaction with care provided by the nurse practitioner. The Interacting Systems Framework and the Theory of Goal Attainment by Imogene King was reviewed as the theoretical

foundation for this research project. The research questions were identified, and the limitations and delimitations were discussed.

CHAPTER II

Review of the Literature

For the purpose of this study, data-based and theory-based articles were reviewed and critiqued using a knowledgebase template. All studies included in the review of literature were also included in the template. These studies were critiqued for the use of this research. The literature concerning patient satisfaction included 13 articles and represented 428 additional references. The information concerning the nurse practitioner and nurse practitioner role included 18 articles which represented another 433 references. In this chapter, the most relevant studies will be presented with their findings.

An Overview of the Healthcare Literature related to

Patient satisfaction and the Role of the Nurse Practitioner

In 2000, Nancy Knudtson performed a study to determine the level of patient satisfaction with service provided by nurse practitioners to rural patients. Two instruments were utilized in this study. These included the Nurse Practitioner Satisfaction Instrument (NPSI) and the Individual Information Form (IIF) (Knudtson, 2000). The NPSI instrument was modified to fit the current study after consent was obtained from the author. The IIF was developed by the researcher for this study. In this study, 100 NPSIs were collected, but only 93 were included in the data analysis. The seven that were omitted had missing information. The level of significance for all statistical analyses were set at $p \leq .05$. The study included four rural clinics. 25 participants were involved from each of these clinics. The highest possible satisfaction score for the study was 60.0. Table 2 summarizes the results of patient satisfaction with care by the NP.

Table 2. Total Satisfaction Score Mean by Site

SITE	n	MEAN*	SD
------	---	-------	----

A	23	53.39	4.75
B	25	57.24	3.55
C	22	57.00	2.26
D	23	56.57	3.53
Total n	93	56.05	3.90

*The highest possible Total Satisfaction Score is 60.0. SD=Standard deviation
n=Sample number.

(Knudtson, 2000, p. 409)

The previous table shows the high satisfaction rating nurse practitioner service found in this study. The study had two research questions. "What is the level of patient satisfaction with NP service in a rural setting?" (Knudtson, 2000, p. 409) and "What relationship exists between patient satisfaction with NP service and demographic characteristics, expectations of service being met, and likelihood of patients to recommend NP service to others?" (Knudtson, 2000, p.409) The findings demonstrate a high level of patient satisfaction with NP service at four rural clinics in Minnesota and Iowa. Subjects were least satisfied with the cost of an office visit. Patients were also not satisfied with wait time. Subjects were most satisfied with the interpersonal aspects of NP service. These included how they were treated by the NP, and the respect and interest shown by the NP. The findings of this study are consistent with the literature findings. A strength of this study is that it determines level of patient satisfaction with service provided to the rural patient by the NP. A weakness of the study is the use of non-random convenience sample can limit the generalizing of data beyond the current sample. Another weakness is that highly skewed data may have been received due to the "halo effect" or the "ceiling effect"(Knudtson, 2000). In information concerning research question two, younger subjects were more satisfied with NP service versus older subjects. Also, more educated subjects

were more highly satisfied with NP care. The results of this study and others like it can have a positive effect on NP jobs and payment in the future.

In a very basic review of published literature on patient satisfaction with nurse practitioner care, Turriss (2005) looked at 52 articles concerning this topic. This review of literature found that the concept of patient satisfaction has practical and political relevance. This review found that healthcare providers need to be concerned with level of patient satisfaction because this level can contribute to future treatment seeking delays which can negatively affect healthcare outcomes (Turriss, 2005). High levels of patient satisfaction are also related to patient loyalty, adherence to treatment and positive health outcomes (Turriss, 2005). For these reasons, levels of patient satisfaction need to be studied.

Factors affecting patient satisfaction also need to be studied so that any negative factors can be addressed. The strength of this literature review is that it provides a feminist critique of the concept of patient satisfaction, while a weakness is the ease that reviews can be skewed based on the literature reviewed. Turriss states, "A feminist worldview sensitizes researchers to consider issue of voice (who is being heard and who is being excluded); the central importance of exploring and understanding the context and lives of people participating in research; understanding power relations and how those play out in individual experiences of help-seeking; and the influence of both gender on conceptualizations of patient satisfaction and on outcome indicators used in patient satisfaction research" (Turriss, 2005, p. 295). According to the data-based literature review performed by Turriss, further understanding is needed of the values and beliefs that informs our approaches to researching patient satisfaction.

A study done by Cole, Mackey and Lindenberg (2001) used Pearson Product-Moment Correlation. The study used the Satisfaction with Service and NP Care Survey which was developed by the authors of the study. The study was done to examine the relationship among

the various wait times and patient satisfaction with care by the nurse practitioner. The study was carried out in a NP developed and managed clinic. 47 anonymous responses were obtained which accounted for a 78% response rate. Pearson Product-Moment Correlation coefficients were used to examine the relationships among each of the wait times and the total score for satisfaction (Cole, Mackey, and Lindenberg, 2001). The study found no significant relationship between wait time and measure of satisfaction. A strength of this study is the high response rate which should minimize the risk of response bias. A weakness of the study is that because it used a sample of convenience, there is limited generalizability. Additional studies are needed on wait time and patient satisfaction which would indicate the reproducibility of these findings in other settings.

A study evaluating acute care nurse practitioner services was performed by McMullen, Alexander, Bourgeois, and Goodman (2001). This study involved 701 patients. 405 of these were from the traditional service provided by MDs or residents, and 296 were from the Nurse Practitioner Acute Care Service (NPACS). Four tools were used in this study and included the Functional Health Status Short Form-12 (SF-12), the Picker Commonwealth Institute Questionnaire, a survey form adapted from the University Health Consortium Referring Physician Survey, and an instrument formed strictly for this study.

Each of the tools measured different aspects of the study. The SF-12 was used to measure patient health on admission and one month post-discharge. The Picker Commonwealth Institute Questionnaire assessed patient satisfaction one month after discharge. Satisfaction of Physicians referring to the NPACS was also assessed using a form that was adapted from the University Health Consortium Referring Physician Survey. It consisted of 13 five point Likert scale questions and was mailed to each referring physician (McMullen et al., 2001).

The findings from the study found significant differences between traditional service patients versus the NPACS patients. The traditional service patients scored lower on the physical health summary on admission and one month after discharge (McMullen, et al., 2001). This means that the patients seen by the nurse practitioner were healthier on admission into the unit and one month after discharge. This could be because the sicker patients were seen by the traditional service. Traditional service patients also rated their health lower than did NPACS patients. Concerning patient satisfaction, the study found that NPACS patients said their NPs did not talk in front of them as if they were not there. Patients were more satisfied with the way the NP communicated with them, the nurses and other NPs (McMullen et al., 2001). The study found no significant difference between the knowledge and skills of the nurse practitioners and physicians and the care they received. Patients were satisfied with the knowledge and skills of both the NPs and MDs. One negative finding was on a question regarding the explanation of tests. The study found that MDs better explained tests in a way the patient could understand (McMullen, et al., 2001).

A strength of this study is that it determined level of patient, staff and physician satisfaction with nurse practitioners. A weakness of the study is the use of convenience sampling which could skew data and data might change if performed again. A positive finding for the nurse practitioner was a high level of patient satisfaction with the care they received from the nurse practitioner.

A study done by Pinkerton and Bush (2000) consisted of 160 clinic patients and measured patient satisfaction and perceived health. Two instruments were used to gather the data for the study. These were the SF-20 Health Survey and the Nurse Practitioner Satisfaction Instrument. The SF-20 is a short form of the General Health Survey used in the Medical Outcomes Study and includes two single-item scales and four multiple-item scales (Pinkerton

and Bush, 2000). The Nurse Practitioner Satisfaction Instrument consists of 15 items using a five point Likert scale (Pinkerton and Bush, 2000). The instrument measures patient satisfaction as an outcome of NP care as well as gives the particular source of satisfaction or dissatisfaction. Out of 200 individuals who agreed to participate in the study, only 160 qualified. The study was performed by the participants completing each of the instruments. "The SF-20 total score means for NPs and physicians groups tested with the t-test for dependent samples resulted in no significant difference" (Pinkerton and Bush, 2000,p. 215). It was inferred that the perceptions of health in each group were the same. Patient satisfaction was tested using the t-test for independent samples. The results showed no significant difference in the NP's and physician's groups which implies that patient satisfaction was the same for both groups. A strength of this study when compared to previous studies is that this was a managed care environment. A weakness of this study was that availability sampling was used. The study found no significant difference in patient's perceived health or patient satisfaction between the nurse practitioner and the physician groups. This study does provide a foundation for further research. If more studies find no difference in patient satisfaction in care provided by the NP or the MD, for purposes of cost containment, NPs would be the healthcare provider of choice, pending healthcare outcomes are also similar.

A quantitative, descriptive pilot study by Larrabee, Ferri, and Hartig (1997) assessed patient satisfaction with care by nurse practitioners. The study involved four nurse practitioners and used a modified version of the Di Tomasso-Willard Patient Satisfaction Questionnaire (DWPSQ). Four primary care clinics staffed by NPs who provide care to patients with nonurgent illness were used in the study. The mean scores for the 46 items of the DWPSQ were negatively skewed which indicated a high level of satisfaction with NP care. The highest possible score was four and few items had a mean score less than three.

Table 3. Aggregate Mean Scale Score on the modified DWPSQ by clinic

	Clinic	Mean Score
1.	(n=11)	3.4
2.	(n=12)	3.5
3.	(n=10)	3.2
4.	(n=10)	3.7

n=number participants at each clinic (Larrabee, Ferri, and Hartig, 1997, p.3).

This study showed that overall patients were satisfied with their care by the nurse practitioner.

A strength of the study was the use of a modified DWPSQ because of the acceptable internal consistency reliability of the aggregate scale. A limitation or weakness of this study is that the findings are not generalizable to other settings because of the nonrepresentative sample and small size. The study found that groups of patients can differ in their satisfaction with nurse practitioner care and interaction factors may influence this satisfaction. Further studies are needed using larger sample size to corroborate the findings.

A 2002 systematic review of literature was done by Horrocks, Anderson, and Salisbury. The review included 11 randomized controlled trials (RCTs) with only nine reported on patient satisfaction. The findings from the patient satisfaction RCTs were that five of the studies showed patients were more satisfied with NPs than with physicians. Three studies showed no significant difference in patient satisfaction between provider groups and one showed patients were more satisfied with the physician. The studies also showed that NPs had longer consultations than physicians, and did more investigations. The provider groups showed no difference in number of prescriptions, return consultations, or referrals. The conclusion of this study is that NP care at first point of contact improves patient satisfaction with no difference in

healthcare outcomes. A weakness of this study is the small sample size and the inability to generalize the information related to the small size. A strength of the study is that the study compares patient satisfaction with care of the nurse practitioner. Further studies are needed in settings where NPs have traditionally have not worked.

A study done by Green and Davis (2005) identified the elements most favorably associated with patient satisfaction. The study used the conceptual model Green's Model of Patient Satisfaction with Nurse Practitioner Care which is expressed as a predictive model and displays the predictor component as patient satisfaction. The study used a modified Caring Behaviors Inventory (CBI) which included 42 items with six point Likert scale used to elicit caring responses. The CBI was used to measure perceptions of NP's caring behaviors. A revised Di'Tomasso-Willard Patient Satisfaction Questionnaire was used to measure patient satisfaction. Data was obtained from 36 NPs for analysis. Each NP collected data using the DWPSQ on between nine and thirty-two patients. The result was 817 patient responses.

A predictive modeling design explored the variables that best predict patient satisfaction, while multiple regression determined the equation that best predicts patient satisfaction (Green and Davis, 2005). The study found that NP's perception of caring behaviors, NP gender or setting were not predictors of patient satisfaction. Neither was gender, ethnicity, education or income of the patient. Age was found to be the only predictor of patient satisfaction with NP care (Green and Davis, 2005). Patients age 18-25 reported less satisfaction with care by the NP. The CBI scores were high for all NPs. This shows that NPs see themselves as caring. The DWPSQ scores indicated high satisfaction with NP care. There was no significant relationship found between the DWPSQ and the CBI scores (Green and Davis, 2005). The strength of this study is that it attempted to find factors that affect patient satisfaction. A weakness is that the information could be skewed because the DWPSQ was verbally answered by the patient to the

NP. Some patients may not have answered the questions with complete honesty because the NP was the one asking the questions. Further studies are needed that explore patients' perceptions of satisfaction with nurse practitioner care in various settings, with NPs of different specialties, with different ethnicities and durations of practice. This study was informative because it gave information concerning factors that can affect patient satisfaction with care by the nurse practitioner.

Cooper, Lindsay, Kinn, and Swann (2002) performed a randomized controlled trial that evaluated emergency nurse practitioner services. The study used a convenience sample of 199 patients who were over 16 years old with minor injuries. The patients were randomized either to the experimental group (NP care) or the control group (physician care) (Cooper, et al., 2002). A patient satisfaction questionnaire was completed by each of the patients and measured satisfaction with consultation. The study also looked at quality of clinical documentation, one month follow up, and returns and missed injuries. A documentation audit tool was used by the researchers to evaluate clinical documentation. A one-month follow-up questionnaire was mailed to the patients and collected information on time to recovery, level and frequency of pain still being experienced, level of symptoms and activity, time off work, and whether any unplanned follow-up was sought (Cooper, et al., 2002). Findings from the patient satisfaction tool indicated patients were very satisfied with the care they received from the NPs and physicians, but patients reported that the Emergency Nurse Practitioners were easier to talk to, were given more information on their injury, and were given information on accident and illness prevention. Overall, this showed that patients were more satisfied with care received from ENPs.

Clinical documentation was also audited and found that ENPs had written notes of higher quality than the physicians. The one-month follow up compared the length of time for full recovery, level of symptoms, level of activity, sleep pattern, and need for unplanned follow up

care. There was no significant difference found in either group. A strength of this study is the large sample size. A weakness is the use of a self-completion questionnaire which can lead to bias and prejudice. Additional studies are needed to compare patient satisfaction with NPs versus physicians in settings other than the emergency room.

A study on patient satisfaction by Medicare beneficiaries was performed by Hooker, Cipher, and Sekscenski (2005). This study compared patient satisfaction with care by physician assistants, nurse practitioners, and physicians. The study's design was a national, cross-sectional survey. The study population was Medicare beneficiaries who were 65 years of age or older. 146,880 were included in the study. Of the 146,880 respondents only 3,770 (2.8%) identified their personal provider as a NP or PA. For the questions concerning patient satisfaction, results were similar across all three providers. "In all indices of satisfaction PAs and NPs were rated as favorably as physicians" (Hooker, Cipher, and Seskensi, 2005, p. 90). The study showed that Medicare beneficiaries are generally satisfied with their care and there was no preference found based on type of provider. Strengths of the study include the large number of respondents and the cross-sectional nature of the survey. A weakness of the study is the low percentage of respondents who identified their healthcare provider as a PA or NP. Further studies are needed comparing patient satisfaction of care by NPs, PAs, and MDs.

Finally, a study was done to compare selected outcomes for a new chronic disease management program involving a nurse practitioner-physician team with those of an existing model of care of only physicians (Litaker, et al., 2003). In the study, 157 patients with hypertension and diabetes mellitus were assigned randomly to their primary physician and nurse practitioner or to their primary physician alone. Results of the study found that although costs for personnel were higher for the physician-nurse practitioner team, participants had significant improvement in mean HgbA1C and HDL-c. In addition, satisfaction with care improved

significantly for team treated subjects. A strength of this study is it demonstrates the effectiveness and potential value associated with the use of non-physician professionals in collaborative disease management. A weakness of the study is the difficulty to generalize the findings based on the small sample size. Further studies are needed to examine the effectiveness of NP-MD teams in different practice settings, and different clinical and demographic characteristics.

Summary

Of the studies covered in this review of literature, six showed that patients were more satisfied with care from the NP versus the physician. Two of the studies indicated no significant difference between patient satisfaction with care by the nurse practitioner or physician. One study stated that age was the only predictor of patient satisfaction with those between 18-25 less satisfied with the NP. Another study showed more improvement in patient HDLc and HgbA1C scores in those patients who were treated by a nurse practitioner/physician team versus physician alone. A final important point found in this review of literature was that increased patient satisfaction can affect patient loyalty, decrease treatment seeking delays, improve adherence to treatment, and positive affect health outcomes.

As this review of literature has shown, much research and many studies have been done on patient satisfaction of the nurse practitioner. There is still much study that needs to be done to further explore patient satisfaction with the role and care by the nurse practitioner. Factors that can effect patient satisfaction also need further study. This review has critiqued some of the articles found regarding patient satisfaction with care by the nurse practitioner. All articles included in this review discussed patient satisfaction with nurse practitioner care. Some of these articles were reviews of prior literature, while most were studies conducted to explore patient

satisfaction. Additional studies are needed to explore the different factors that can affect patient satisfaction in different areas.

Chapter III

Design and Methodology

This chapter will present the specific parameters used for this research investigation. An integrated literature review was used. This chapter will detail the approach, literature selection procedure, and literature analysis procedure used.

Approach

An integrated literature review will be used for this study. This type review combines comprehensive information on a topic, weighs pieces of evidence, and integrates information in order to draw conclusions about the state of knowledge. A summary of current literature on patient satisfaction with care by the nurse practitioner and the role of the nurse practitioner is provided.

Literature Selection Procedure

A systematic search was performed of CINAHL, MEDLINE, and The Cochrane Library for relevant literature regarding the role of the nurse practitioner, and patient satisfaction. The reference list accompanying each article was then manually reviewed for further articles pertaining to the subject. Articles were chosen by the inclusion of one or more relevant concepts. The concept could be the major focus of the article, or a part of the broader subject.

The review of literature began with MEDLINE to find pertinent nursing literature on patient satisfaction and nurse practitioner. Next, CINAHL was investigated for literature that could be used in the study. Finally, The Cochrane Library was evaluated for relevant literature. Journal articles were also obtained through Mississippi University for Women library, the MUW internet database, and interlibrary loan department. The review included any data pertinent to

the topic and was not limited to nursing literature. The chosen references were applicable and relevant to this review. The references were obtained from respected, reputable scholarly journals in healthcare fields.

Literature Analysis Procedure

For the purpose of this study, the Knowledgebase for Critique of Literature template will be used to critique the literature. This will include highlights of the study and will be critique by source, date, variables, literature type, research tools, research design, major findings in the study, strengths and weaknesses of the study, implications for future investigation, sample size, theoretical foundation, references, and key findings. Data (provided in Appendix A) is analyzed in terms of relevancy of findings and summarized utilizing a chart format to assist in application of findings to the clinical problem. The findings are discussed in Chapter Four according to the research questions regarding patient satisfaction with nurse practitioner care.

Summary

The design methodology of approach, literature selection procedure, and literature analysis of the literature provided a meaningful body of knowledge that has significance, validity and implication. This chapter detailed the parameters for this research investigation. This review of literature has laid a foundation that can be built on in the future. It provides a base for future opportunities. Readers will broaden their knowledge concerning patient satisfaction with care by the nurse practitioner. It is essential for research in this area to continue to validate the nurse practitioner role as it relates to cost-effective quality care.

CHAPTER IV

Knowledgebase Findings and Practice-Based Application

The goal of this chapter is to present the findings of the knowledgebase that was derived from this evidence-based systematic literature review. Pertinent findings derived from this knowledgebase are provided in written form with practice-based application. The research questions are addressed and answered as they relate to the knowledgebase findings and practice-based applications.

Knowledgebase Findings

Two research questions were examined for this project. The findings represent the current healthcare literature regarding patient satisfaction with the role of the nurse practitioner. Literature concerning factors that affect this satisfaction will also be represented. The literature was obtained through a computer search and utilized MEDLINE, CINAHL, and The Cochrane Library. The literature reviewed consisted of thirteen articles concerning patient satisfaction with the nurse practitioner. This represented another 428 references. The literature review regarding the role of the nurse practitioner consisted of eighteen articles which represented another 433 references. Pertinent findings of these reviews will be discussed.

Research Question One

Research question one asks: How satisfied are patients with the care they receive from the nurse practitioner? The literature available in the field of patient satisfaction with the nurse practitioner role is modest. After delimiting the topic to patient satisfaction AND nurse practitioner, and only articles published in the last five years there were only 55 hits on MEDLINE, 56 on CINAHL, and 50 in The Cochrane Library. Although there is a moderate amount of information concerning this topic, more studies are needed to completely answer Research Question One.

A study performed by Knudtson (2000) showed high satisfaction with NP service. In a study by McMullen, et al. (2001) it was found that patients were satisfied with the knowledge and skills of the NP. Another study showed no significant difference in patient satisfaction with care by the NP or the MD (Pinkerton and Bush, 2000). Other studies also showed high patient satisfaction with care by the NP, i.e.: Larrabee, Ferri, and Hartig (1997), Green and Davis, 2005, and others. On the review of literature it was also found that some patients were not satisfied with NP service as found in the study by Horrocks, Anderson, and Salisbury (2002). This systematic review of literature was performed that included nine RCTs. Three of these showed no difference in patient satisfaction between provider groups, one showed patients were more satisfied with the physician, and five showed patients were more satisfied with NPs than physicians (Horrocks, Anderson, and Salisbury, 2002). Another study showed no difference in patient satisfaction between providers. In this study patients were satisfied with care from MDs, NPs, and PAs (Hooker, CIPHER, and Sekscenski, 2005).

The literature concerning Research Question One shows patient satisfaction with the nurse practitioner. In a majority of the studies it was found that patients were more satisfied with the NP than other healthcare providers. There was one study that showed that patients were more satisfied with the MD than the NP. There were also several studies that showed no significant difference between patient satisfaction with care by the NP, MD, or PA. These studies did not find dissatisfaction with NP care, just that patients were as satisfied with any type of healthcare provider.

Research Question Two

Research question two asks: What factors affect patient satisfaction with the nurse practitioner? The amount of literature researching factors affecting patient satisfaction with care by the nurse practitioner is extremely limited. Only two articles pertaining to factors affecting

patient satisfaction with care by the nurse practitioner were found. These had differing findings. One article found that age was the only factor that determines patient satisfaction with care by the nurse practitioner; while the other found that multiple factors affected patient satisfaction.

The first study that identified factors affecting patient satisfaction with care by the nurse practitioner was done by Green and Davis (2005). This study determined that age was the only predictor of patient satisfaction with NP care. It was found that patients aged 18-25 reported less satisfaction with care by the nurse practitioner (Green and Davis, 2005). The study also assessed other factors that might affect patient satisfaction including the nurse practitioner's perception of caring behaviors, NP gender, setting, patient gender, patient ethnicity, patient education and patient income. It was found that none of these factors affected patient satisfaction with care by the nurse practitioner.

The second article that identified factors affecting patient satisfaction was a study performed by Knudtson (2000). In this study, it was determined that patients were most satisfied with interpersonal aspects of NP service including treatment given by the NP, and the respect and interest shown by the NP. Patients were least satisfied with the cost of an office visit. Patients were also dissatisfied with wait time.

These two articles had different findings regarding factors affecting patient satisfaction with care by the nurse practitioner. Much more study is needed to be done in order to find definite factors affecting patient satisfaction. It would be difficult to generalize these findings because there is currently such a limited amount of information. If multiple studies were done concerning factors affecting patient satisfaction and had similar outcomes it could be assumed that the findings would be generalizable.

The answer to research question two is difficult to determine related to the limited amount of information available and the conflicting findings. Further study could help to answer this research question adequately.

Practice-Based Application

The use of the findings in this integrative review of literature is important to the role of the nurse practitioner. Nurse practitioners need to stay current on the level of patient satisfaction with NP care as well as factors affecting it. Nurse practitioners can use the research available to make any changes needed to improve or maintain patient satisfaction. Research helps to give a scientific base to the NP role as well as contribute to the professional aspect of the NP. Research needs to be performed by and used by NPs in order for patient satisfaction to remain high.

Summary

The main objective of this study was to investigate the two research questions pertaining to patient satisfaction with care by the nurse practitioner. This chapter attempted to appropriately answer these two questions using information from the systematic review of literature. According to the review of literature, patient satisfaction with care by the nurse practitioner is high. Several factors were found that positively affect patient satisfaction, while only one was found that does so negatively. Further studies are needed to confirm these factors.

CHAPTER V

Evidence-Based Conclusions, Implications, and Recommendations

This chapter will address the findings of this study, interpret them, and formulate conclusions. The knowledgebase findings and the practice-based application findings from the research questions will also be compared and contrasted. Limitations encountered will then be discussed. The chapter will additionally speak to the implications and recommendation for further research and practice. Implications and recommendations will include those of research specific to nursing theory, health policy and factors affecting patient satisfaction. Recommendations will also be given for practice-based application. Lastly, a comprehensive summary of this investigation will be provided.

Summary of the Investigation

The purpose of this investigation was to explore the literature pertinent to patient satisfaction with care by the nurse practitioner. The systematic review of literature demonstrated that there has been significant interest and study concerning patient satisfaction with the role of the nurse practitioner. There was very limited information found on factors that affect patient satisfaction. This needs to be further studied in order to provide nurse practitioners with knowledge of factors that can positively affect patient satisfaction with care by the nurse practitioner.

Interpretation of Findings with Conclusion

This section will review the findings of the research questions from the knowledgebase and practice-based application perspectives. Additional analysis of the findings will include the comparing and contrasting of these two perspectives as they relate to each question. The research questions will be answered and will form the conclusions of this investigation.

Research Question One

Research question one asks: How satisfied are patients with the care they receive from the nurse practitioner? The level of healthcare knowledge concerning patient satisfaction with the nurse practitioner is adequate. There is a lack of current research pertinent to patient satisfaction with care by the nurse practitioner. There is also a minute amount of information that tells factors that affect this satisfaction.

The integration of the knowledgebase findings and practice-based applications reveal an adequate amount of knowledge and study concerning patient satisfaction with care by the nurse practitioner. There is a lack of knowledge that these findings could greatly impact the future of the NP role. Consequently, the answer to Research Question One is that patients are very satisfied with the care of a nurse practitioner. In most cases, it was found that patients were more satisfied with the nurse practitioner than other healthcare providers.

Research Question Two

Research question two asks: What factors affect patient satisfaction with the nurse practitioner? In the systematic literature review only two articles were found that address factors affecting patient satisfaction with care by the nurse practitioner. These two articles studied different factors and consequently had different findings. It is therefore difficult to answer this question appropriately when so little study has been done on this topic. To answer the question, the findings from both articles will be utilized.

The answer to Research Question Two is multifaceted. One study found that age was a predictor or factor affecting patient satisfaction. It was also determined that nurse practitioner's perception of caring behaviors, NP gender, setting, patient gender, patient ethnicity, patient education nor pain affected patient satisfaction. In another study it was determined that patients were most satisfied with interpersonal aspects of NP service including treatment given by the

NP, and the respect and interest shown by the NP. Patients were least satisfied with the cost of an office visit and wait time. Further study is needed to fully and adequately address this issue.

Limitations

There were a few limitations encountered in the course of this study. The literature obtained consisted of many research articles that did not provide adequate sample sizes or methodology to establish verifiable results. An additional limitation to this study was the moderate amount of literature available. This may have caused important articles to have been inadvertently left out.

Implications and Recommendations

The literature investigated in this study revealed some deficiencies that need to be addressed. The lack of information obtained in the areas of nursing theory, and health policy propose a need for implications and recommendations. There is also a need for thorough research concerning factors that affect patient satisfaction with nurse practitioner care. The suggestions for improvements regarding these issues will now be discussed.

Nursing Theory

The theoretical foundation utilized in this study was the Interacting Systems Framework and Theory of Goal Attainment by Imogene King. There was no research found that related this theory to patient satisfaction of the nurse practitioner. Only one study was found to utilize nursing theory and this was Rogers' Diffusion of Innovative Theory. No article was found to use King's theory. Nurse practitioner journals should encourage the use of theory-based research on all subjects in order to develop a better understanding of the application of theory to practice.

Health Policy

It would be beneficial for nurse practitioners to encourage health policy related to studies to determine patient satisfaction with care by the nurse practitioner. This could be beneficial to decrease healthcare costs. If patient satisfaction with care by the nurse practitioner was overwhelmingly found in studies as well as improvement in patient health, insurances as well as Medicare and Medicaid would support increased utilization of nurse practitioner services. Patient satisfaction and positive patient outcomes after NP care would prove the cost effective, quality care provided by nurse practitioners. This would have a positive affect on the future of the nurse practitioner because it would increase the use of the NP by indemnity payors.

Factors Affecting Patient Satisfaction

Further study is also needed to determine specific factors affecting patient satisfaction. In the course of this study only two studies were found to address this issue and both had very different findings. More and current research is needed to address this topic. These factors affecting patient satisfaction could then be addressed by nurse practitioners in order to make needed changes to keep patient satisfaction at the highest level possible.

Summary

This study investigated patient satisfaction with care provided by the nurse practitioner. There is a vast amount of information related to this topic, but there is still a lack of current literature to address this issue. This study revealed that patients are very satisfied with care by the nurse practitioner or patients are at least as satisfied with care by the nurse practitioner as from other healthcare providers. Only one article reviewed found dissatisfaction with nurse practitioner care. Additional studies to find factors that negatively and positively affect patient satisfaction are needed.

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Appendix

Concept Knowledgebase for Critique of Theory-Based, Data-Based, and RCT Literature

Source & Database	Variables of Interest (Keywords)	Literature Type & Research Tools	Research Design & Sample Size	Theoretical Foundation	# References & SWOT Critique	Key Findings
(Knudtson, 2000), US, CINAHL	-patient satisfaction, -nurse practitioners, -health care service delivery,	data-based -Nurse Practitioner Satisfaction Instrument (Knudtson, 2000)	Non-random convenience sampling (N=93)	None	#=58 S=determines level of patient satisfaction with service provided by nurse practitioners to rural patients W=use of non-random convenience sample limits generalizing of data O=foundation for further research T=could be highly skewed data related to non-random convenience sampling	Findings support the effectiveness of NP providers and the need for less restriction in reimbursement policies
(McMullen, Alexander, Bourgeois, Goodman, 2001), US, CINAHL	-nurse practitioners, -patient satisfaction, -physician satisfaction, -staff satisfaction,	data-based -Functional Health Status Short Form- (SF 12) (McHorney, 1993)	Convenience sampling (N= 701)	None	#=19 S=determines level of patient, staff, and physician satisfaction with nurse practitioners W=use of	Patients, staff and physicians very satisfied with nurse practitioner services

Pinkerton, Bush, 2000), U.S., Cinahl	-nurse practitioners, -physicians, -patient satisfaction,	data-based -SF-20 Health Survey (Stewart, Hayes, and Ware, 1988) -Nurse Practitioner Satisfaction Instrument (Knudtson, 1995)	Evaluation, availability sampling (N=160)	None	convenience sampling could skew data O= foundation for future research T= use of convenience sample could have different outcomes if performed again #51 S=study conducted in managed care environment W=availability sampling used O=foundation for further research T=negatively skewed scores indicates that more data is distributed in the tails rather than the mean	No significant difference in patient's perceived health between the NP and the physician groups.
(Cole, Mackey, Lindenberg, 2001), U.S., Cinahl	-nurse practitioners, -waiting time, -satisfaction, -nurse practitioner clinics,	data-based -Satisfaction with Service and NP care Survey (Cole, Mackey, Lindenberg, 1999)	Evaluation, Pearson Product- Moment Correlation (N=47)	None	#33 S=examined the relationships among various times patients wait for health care and patient satisfaction with NP care and the service	No statistically significant relationships among various wait times and the measures of satisfaction

						<p>component of care W=small sample size O=further research needed on wait time and satisfaction in other NP managed clinics T=Reliability, might have different findings in another setting</p>				
(Forgeron, Martin-Misener, 2005), U.S., Cinahl	-emergency nursing, -emergency services, -health care delivery, -nurse practitioner, -pediatric nurse practitioner,	data-based Role Responsibility Scale (Forgeron, Misener, 2005) Pediatric Nurse Practitioner: Attributes of Innovation Scale (Forgeron, Misener, 2005)	Across-methods triangulated (N=100)	Rogers' Diffusion of Innovation Theory (Rogers, 1995)	<p>N=31 S=Investigates the factors that influence parental intent to use the PNP services W=Blishen scale unable to use some responses accurately O=results from this study can be used to support the role of the NP T=Lack of NP on review panel could skew results</p>	<p>Compatibility of NP services with parents' beliefs and needs was most significant variable predicting parental intent to use NP services.</p>				
(Turris, 2005), U.S., MEDLINE	-nursing, -patient satisfaction,	data-based	Literature review (N=0)	None	<p>N=52 S=Provides a feminist critique of</p>	Needs further understanding of the values and				

-feminist critique				the concept of patient satisfaction W=Literature reviews can be skewed depending on chosen literature O=foundation for further research T=reliability because chosen literature could skew results N=29	beliefs that informs our approaches to researching patient satisfaction.
				S=Assessed patient satisfaction with care by nurse practitioners W=Convenience sampling could skew results O=foundation for further research T-One subscale used had a lower reliability than the original instrument N=15	Found that groups of patients can differ in their satisfaction with nurse practitioner care and interaction factors may influence this satisfaction.
(Larrabee, Ferri, Hartig, 1997), U.S., CINAHL	-satisfaction, -nurse practitioner,	data-based Di Tomasso-Willard Patient Satisfaction Questionnaire (Di Tomasso, & Willard, 1991)	Descriptive correlational, convenience sampling (N=43)	None	
	-nurse practitioner, -nurse practitioner role,	data-based	Survey (N=437)	None	Provides information on aspects of ACNPs and the development of
(Kleinpell, 2005) U.S., CINAHL					

Developed from Davidson, J.U. (2003). "Example knowledgebase development template," Appendix B (pp. 77-78). In *Grantsmanship: Developing a program of research* (Eds., Rankin, S.H.; Dumas, M.A. & Reavis, C.). Washington, DC: National Organization of Nurse Practitioner Faculties.

Concept Knowledgebase for Critique of Theory-Based, Data-Based, and RCT Literature

Source & Database	Variables of Interest (Keywords)	Literature Type & Research Tools	Research Design & Sample Size	Theoretical Foundation	# References & SWOT Critique	Key Findings
Cole, Ramirez, 2005), U.S., CINAHL	-advanced practice, -emergency care, -emergency nurse practitioner -nurse practitioners, -roles, -scope of practice	Data-based	Snowball sampling (N=72)	None	N=15 S=Discusses the use of nurse practitioners in the emergency setting W=small sample size O=basis for future research T= use of snowball sampling risks validity and reliability	Discusses the scope of practice of emergency nurse practitioners
(Horrocks, Anderson, and Salisbury, 2002), U.S., MEDLINE	-nurse practitioner -patient satisfaction, -nurse practitioner role	Systematic review of literature	Randomized controlled trials (N=2)	None	N=34 S=Found that np care at first point of contact improves patient satisfaction with no difference in healthcare outcomes W=Small sample size O=Basis for future research T=Inability to generalize r/t small	NP care at first point of impact improves patient satisfaction with no difference in healthcare outcomes

Developed from Davidson, J.U. (2003). "Example knowledgebase development template," Appendix B (pp. 77-78). In *Grantsmanship: Developing a program of research* (Eds., Rankin, S.H.; Dumas, M.A. & Reavis, C.). Washington, DC: National Organization of Nurse Practitioner Faculties.

(Green and Davis, 2005), U.S., Interlibrary Loan	-nurse practitioner -caring -patient satisfaction -CBI -DWPSQ	Data-based -Caring Behaviors Inventory (Green and Davis, 2005) -Di' Tomasso- Willard Patient Satisfaction Questionnaire (Green and Davis, 2005),	Predictive modeling (N=817)	Green's Model of Patient Satisfaction with Nurse Practitioner Care	sample size (#=36) S=Attempted to find factors that affect patient satisfaction. W=Information could be skewed because the questionnaire was verbally answered to the NP. O=Basis for further studies. T=Difficult to reproduce data if performed in another setting.	NPs perceptions of caring behaviors, NP gender, setting or patient gender, ethnicity, education or income are not predictors of patient satisfaction. Age was the only factor found to influence patient satisfaction.
(Cooper, Lindsay, Kinn, and Swann, 2002), U.S., MEDLINE	-emergency nurse practitioner -patient satisfaction -minor injuries -clinical documentation	Data-based -Patient Satisfaction Questionnaire (Cooper, Lindsay, Kinn, and Swann, 2002)	Randomized Control Trial (N=199)	None	(#=42) S=Large sample size. W=Use of self- completion questionnaire can lead to bias and prejudice O=Basis for future study. T=Difficult to generalize data in non-emergency setting	Patients were very satisfied with care received from the nurse practitioner.
(Hooker, Cipher, and	-patient	Data-based	National, cross-	None	(#=11)	The study found

Developed from Davidson, J.U. (2003). "Example knowledgebase development template," Appendix B (pp. 77-78). In *Gransmanship: Developing a program of research* (Eds., Rankin, S.H.; Dumas, M.A. & Reavis, C.). Washington, DC: National Organization of Nurse Practitioner Faculties.

Sekscenski, 2005), U.S., Inter Library Loan	satisfaction -physician assistant -nurse practitioner -beneficiaries -physician	Medicare fee-for- service Consumer Assessment of Health Plans Survey	sectional survey (N=146,880)		S=Large number of respondents and cross-sectional nature of the survey W=Low percentage of respondents who identified their healthcare provider as a NP O=Basis for future study. T=Data could be skewed r/t respondent answers	that in all indices NPs and Pas scored as favorably as physicians.
(Litaker, et al., 2003), U.S., MEDLINE	-chronic disease management -collaborative patient care -patient satisfaction -treatment outcomes	Data-based Health Survey Short Form(Litaker, et al., 2003), Diabetes Quality of Life Questionnaire(Lita ker, et al., 2003),	Meta-analysis (N=157)	None	#=59 S=Demonstrates the effectiveness and value associated with use of non-physician professionals in collaborative disease management. W=Difficult to generalize the findings based on the small sample size O=Foundation for	Participants had significant improvement in mean HgbA1C and HDL-c. Satisfaction improved significantly in those treated by team.

